Tshingombebusiness fiston <tshingombebusinessfiston@gmail.com>
to tshingombebusinessfiston

9:41 AM (0 minutes ago)

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NSF MyWork

- Home
- SBIR / STTR Project Pitches
- I-Corps Executive Summary

NSF I-Corps Executive Summary

To submit an Executive Summary, click on the "Submit New Application" button on the right. To access any Executive Summary you may have submitted before, see the list of past Executive Summaries below.

My Submissions

Navigation Mode

Sort by:Executive Summary IDSorted: None	Sort by:Academic InstitutionSorted: None	Sort by:Entrepreneurial LeadSorted: None	Sort by:Technical LeadSorted: None	Sort by Me LeadS No
P-10438	saqa/ atlatic international university	engineering electrical engineering electrical	engineering electrical engineering electrical	engineer electrica engineer electrica
P-10307	atlantic international university and college degree	engineering electrical tshingombe engineering electrical tshinombe		tshingom tsitadi
P-09948	Atlantic international university	engineering electrical engineering electrical	engineering electrical engineering electrical	engineer electrica engineer electrica
P-09874	Engineering electrical tshingombe	engineering electrical engineering electrical	engineering electrical engineering electrical	engineer electrica engineer electrica

I-Corps Executive Summary Detail

I-Corps Executive Summary ID :
P-10438
Academic Institution :
saqa/ atlatic international university
Entrepreneurial Lead :
engineering electrical engineering electrical
Entrepreneurial Lead Email :
Emailtshingombefiston@gmail.com
Entrepreneurial Lead Qualification :
enginering electrical
Technical Lead :
engineering electrical engineering electrical
Technical Lead Email :
Emailtshingombefiston@gmail.com
Technical Lead Qualification :
engineering electrical
I-Corps Mentor :
engineering electrical engineering electrical
I-Corps Mentor Email :
Emailtshingombefiston@gmail.com
I-Corps Mentor Qualification :

engineering

Should your team be invited to submit an I-Corps Teams grant proposal, who will be submitting the grant proposal as PI :

PI of Record – submits proposal and manages award, but does not participate in the training

Is your team submitting from another federal agency? If so, please select from the drop down below :

DHS

There are two pathways to establish for the NSF I-Corps Teams program. Which is your team claiming :

By agreement with NSF

What is the IP status of the innovation :

Not disclosed to tech transfer office

Brief Description of Technology (Intellectual Merit) :

v> Title: Application Trade Discovery: Job Education Research

Methodology, Operational Autodidactic Copilote Distance,unified system

for lifelong talent development.

Key Description

• Domains: Vocational training, AIU curriculum, CPD systems, PCB

implementation, microcontroller logic, and trade diagnostics

• Tools: Visual Basic logigrammes, signal registers, PLC command

circuits, ATM logic, and curriculum dashboards

• Frameworks: AIU career center, CPD Scotland, SAQA, NATED, RNF, SCIE,

and trade company integration

Data Analysis

• Sources: Published theses, CVs, experimental portfolios, discovery

logs, and trade inventories

• Signals: Career progression (junior/senior), award validation,

curriculum mapping

• Metrics: Energy output, signal classification (linear/non-linear), grid

stability, skill level tracking

equations, and total cost analysis.

Credential Record Tableaux Line (Extended Format)

Date Institution / Platform Item / Module Sale Price Amendment Final

Cost Award / Certificate Library Usage Booking (Type & Duration) Booking

Price Notes / Integration Points

2025-10-08 Shoprite / CNA / Elektor Elektor Starter Kit R450 -R90 R360

Electronics Fundamentals 3h Sixty60 Delivery (1h) Free GitHub

Brief Description of Commercial Applications (Broader Impacts) :

v> equations, and total cost analysis.

Credential Record Tableaux Line (Extended Format)

Date Institution / Platform Item / Module Sale Price Amendment Final

Cost Award / Certificate Library Usage Booking (Type & Duration) Booking

Price Notes / Integration Points

2025-10-08 Shoprite / CNA / Elektor Elektor Starter Kit R450 -R90 R360

Electronics Fundamentals 3h Sixty60 Delivery (1h) Free GitHub + SAQA/NQF

dashboard

2025-10-08 GitHub Reward Model Deployment $120 -$40 $80 Contributor Badge 3h

CI/CD Run (1h) Free GitHub + AGI Collaboration Record

Historiogram Equations for Behavioral Fusion

• Fusion of User Behavior: $$ F_{ui} = w_o O_{ui} + w_a A_{ui} + w_b

B_{ui} $$ Where OuiO_{ui}, AuiA_{ui}, and BuiB_{ui} are order,

following, and browsing counts; weights wo=1w_o = 1, wa=0.5w_a = 0.5,

wb=0.5w_b = 0.5

• Cosine Similarity for User Fusion: $$ S_f(u,v) = \cos(\theta) =

\frac{F_u \cdot F_v}{\|F_u\| \|F_v\|} $$

• Total Similarity Score: $$ S(u,v) = S_f(u,v) + S_{bid}(u,v) +

S_{nb}(u,v) + S_{item}(u,v) $$

• Top-K Recommendation Set: $$ RS_u = \{i_1, i_2, ..., i_K\} $$ Where KK

is the mean of historical orders for user uu

Total Cost Analysis Table

Category Sale Price Amendment Final Cost Booking Cost Net Cost

Starter Kit R450 -R90 R360 Free R360

Reward Deployment $120 -$40 $80 Free $80

AGI Collaboration & E-Commerce Integration

AGI in Human-Machine Collaboration

•

Credential Record Tableaux Line Format

Date Institution / Platform Item / Module Sale Price Amendment Final

Cost Award / Certificate Reward Points Library Usage Booking (Type &

Duration) Booking Price Notes / Integration Points

2025-10-08 CPS Institute CPS Architecture & IoT Lab R1,500 -R400 R1,100

Certificate – CPS Integration 180 pts 4h Sensor Network Workshop (2h) R300

GitHub + SAQA/NQF +

025-10-08 Blockchain Academy DLT Credentialing Module $200 -$60 $140

Certificate – Blockchain in Education 150 pts 3h Smart Contract Lab (1h)

Free GitHub + ORCID Registry + SAQA/NQF

2025-10-08 GitHub AGI Fusion Engine Deployment $120 -$40 $80 Contributor Badge

100 pts 3h CI/CD Run (1h) Free GitHub + AGI Collaboration Record

' Module: CPSDLTCredentialDashboard

Option Explicit

Credential Record Tableaux Line Format

Date Institution / Platform Item / Module Sale Price Amendment Final

Cost Award / Certificate Reward Points Library Usage 14. Briefly Describe the Technical Objectives and

Brief Description of Current Commercialization Plan :

v> Project-29 Overview: Modular Engineering Record Book

Field Description

Project Title Untitled (Project-29)

Created 24 August 2025

Last Modified 24 August 2025

Project Owner Tshingombe

End User Company Tshingombe Engineering

Scope Engineering trade application (theory + practical)

Modules BOM Manager, Activity Log, Documents, Product Configurator

Tools Referenced Visual Basic logigramme, algorigramme, data analysis,

cost tracking, award/reward ledger

Modular Components for BOM and Trade Curriculum

Product Segments

• Conveyor, HVAC, Food Depositor, Hoisting, Material Working, Pumping,

Packaging

• PLC, PAC, IOs, VSD, Soft Starters, HMI Panels, Relays, Enclosures,

Harmony Interfaces

• Motion Control & Robotics, Power Supplies, Software License

Configurator

BOM Logic

• Add by reference number or Excel/CSV template

• Segment-based selection tools

• Total cost tracking (currently R0.00 for Project-29)

Record Book & Transcript Integration

Award & Amendment Ledger

• Projects 1–29 show a cost range from R0.00 to R400,547.09

• Amendments and rewards can be tracked using:

o EcoStruxure Security Expert: Digital Job Book

o Single Record Download Service

o Transcript dashboard (12 hours completed, R0.00 cost)

Visual Basic Logic Modules

• Logigramme: Flowchart logic for BOM, training, and award tracking

• Algorigramme: Algorithmic logic for cost analysis, detection rate, and

transcript amendment

Training & Curriculum Mapping

Training Module Status Duration

Wind Energy Fundamentals Active No Due Date

EcoStruxure Security Expert Completed 97 min

Transcript Aggregate Active 12 hrs

• Curriculum aligns with engineering trade theory + practical, security

systems, and energy fundamentals

• Use transcript to manage active training and fiscal year reporting

(ends 31/12/2025)

Legacy Project Ledger (Projects 1–28)

Project Last Modified Cost

Project-28 17/3/2025 R30,687.22

Project-25 9/3/2025 R400,547.09Project-17 5/3/2025 R385,363.62

Project-12 17/1/2024 R119,344.00

Project-3 12/1/2024 R23,325.59

These entries can be linked to a Visual Basic-powered dashboard for cost

evolution, reward tracking, and amendment history.

Would you like help generating a logigramme or algorigramme for Project-

29’s BOM flow, transcript logic, or award ledger? I can also scaffold a

bilingual export module for your record book.

Here's how we can scaffold this into your bilingual, audit-ready

framework:

Eaton Integration Summary: Modular Credential & SLA Tracker

Registration & SLA Configuration

Field Value

Platform

Status Registration Pending

Form Submitted 23 Feb 2025

UPS Type BladeUPS

kVA Rating 36

Serial No. 30

Service Plan PREMIUM

Response Level 8/5 and 24/7

Cyber Monitoring Enabled

OPEX Optimization Yes (travel, labour, spare parts included)

This SLA logic can be embedded into a Visual Basic algorigramme for

predictive maintenance, cost evolution, and cyber diagnostics.

Training Completion: Eaton University

| Activity Code | ETNFRFSWHR_EL | | Workv> ready framework that supports:

Innovation & Discovery Record Book

Overview & Scope Statement

This record book documents:

• Curriculum-linked inventions across electrical, energy, and digital

systems

• Patent claims and amendments with low-cost traceability

• Award tracking: Gold, Platinum, and institutional recognition

• System integration with Visual Basic logic, logigrammes, and schematic

principles

Management System Information

• Visual Basic dashboards for module tracking

• Logigrammes for workflow mapping (e.g., fault detection, relay logic)

• Organigrammes for career progression and qualification pathways

• Audit-ready export logic for GitHub, archive.org, and institutional

repositories

Deliverables & Inventory

Category Deliverable

Innovation Patent claim forms, invention descriptions

Curriculum Text box modules, schematic diagrams

Assessment Experimental scores, performance metrics

Awards Gold/Platinum certificates, cost-benefit analysis

System Logic Visual Basic code, processor frames, relay logic

Publication Research articles, AIU repository entries

Supports patent, award, and curriculum tracking Needs institutional

alignment

Cross-platform (GitHub, archive.org, Excel) Initial setup may be resource

-intensive

Data Analysis & Research Methods

• Visual Basic logic: ReadControlPort(), ToggleSCADASwitch(),

ControlLED(), SwitchOffPin7(), CalculateZ()

• Equations:

o Z=rg+jxdZ = rg + jxd

o Pmax=V24ZP_{max} = \frac{V^2}{4Z}

o S=VI=P+jQS = V \cdot I = P + jQ

o Energy=it1t2\text{Energy} = i \int_{t_1}^{t_2}

• Curriculum comparison: Experimental score vs. module value

Status :

Declined

Submitted Date :

Oct 15, 2025

Showing 1-4 of 4 records | Page 1 of 1

For technical questions or immediate assistance, please email:
or call the NSF TIP Help Desk at (888) 988-6507

8 AM - 5 PM Eastern Time, Monday through Friday (except for federal holidays)

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I-Corps Executive Summary Detail

I-Corps Executive Summary ID :
P-10307
Academic Institution :
atlantic international university and college degree
Entrepreneurial Lead :
engineering electrical engineering electrical
Entrepreneurial Lead Email :
Emailtshingombefiston@gmail.com
Entrepreneurial Lead Qualification :
engin
Technical Lead :
tshingombe tshinombe
Technical Lead Email :
Emailtshingombekb@gmail.com
Technical Lead Qualification :
engineering

I-Corps Mentor :
tshingombe tsitadi
I-Corps Mentor Email :
Emailtshingombekb@gmail.cm
I-Corps Mentor Qualification :
enginering
Should your team be invited to submit an I-Corps Teams grant proposal, who will be submitting the grant proposal as PI :
Technical Lead (TL)
Is your team submitting from another federal agency? If so, please select from the drop down below :
Other Agency
There are two pathways to establish for the NSF I-Corps Teams program. Which is your team claiming :
Relevant current/previous NSF research award
What is the IP status of the innovation :
Not disclosed to tech transfer office
Brief Description of Technology (Intellectual Merit) :

1. Career Center Discovery Framework

Education-to-Career Progression

A developmental pathway from grade school to professional roles:

- **Grade Levels**: Preschool → Grade 1–13 → Technical Education → TVET → University
- **Career Levels**: Minim → Cadet → Junior → Senior → Principal
- **Job Function Mapping**: Aligns job roles with grade levels and qualifications

Psychometric Assessment Services

- **Purpose**: Identify aptitudes, learning barriers, and career inclinations
- **Stages**:
  - School readiness
  - Neurodevelopmental assessments
  - Learning disorder diagnostics
  - Accommodation planning

2. Life Stage Development (Ages 0–80)

Key Phases

- Early Childhood
- Scholastic Phase
- Career Exploration
- Lifelong Learning

School Readiness & Learning Support

- Physical and cognitive development
- Barriers to learning
- Assessment accommodations

3. ICT & Technical Skills Academy (Sci-Boni)

Contact: it@sci-boni.co.za

🧑💻 Youth Training (Ages 18–25

Brief Description of Commercial Applications (Broader Impacts) :

- Provides **benchmarking** against NSQF standards

✅Portfolio-Based Assessment

- Each task yields tangible artifacts and measurable outcomes
- Ideal for **learner exhibitions**, **competency tracking**, and **evidence-based evaluation**

✅Instructor Development

- Clear procedural steps
- Embedded formative assessment
- Emphasis on logic reasoning and circuit behavior

Would you like help designing a **rubric for logic gate testing**, a **portfolio template for regulated power supply builds**, or a **crosswalk between NSQF and South African NQF standards**? I can also assist in developing a **learner tracking sheet** for workshop performance or a **project exhibition framework**.

This final portion of **Exercise 4.1.173** from the *Electrician Trade Practical Manual – NSQF Level 5* completes a robust exploration of **digital logic gates**, both using discrete components and integrated circuits (TTL and CMOS families). It's a powerful exercise for developing foundational digital electronics skills, and it aligns beautifully with your goals of portfolio-based assessment, competency tracking, and curriculum reform.

Let’s summarize and structure the instructional design, then explore how it can be transformed into high-impact learning and evaluation tools.

🔧 Exercise 4.1.173: Practice on Various Logics Using Logic Gates and Circuits

🎯 Learning Objectives

By the end of this exercise, trainees will be able to:

- Construct and verify OR, AND, and NOT gates using switches, lamps, and ICs
- Understand and apply truth tables for basic logic gates
- Identify and test TTL and CMOS logic ICs (7408, 7432, 7404, CD4079)
- Measure voltage levels and interpret logic states
- Use digital IC testers and verify gate functionality

🧪 Key Tasks and Logic Gate Implementation

✅ Task 1–3: OR and AND Gates Using Switches and Lamps

Gate Type	Method	Verification
OR	Switches +	Truth table (A

Gate Type	Method	Verification
AND	Lamp Switches + Lamp	+ B) Truth table (A · B)

Sample Truth Table (AND Gate)

A	B	Voltage A	Voltage B	Output Y	LED Status
0	0	0V	0V	0	OFF
0	1	0V	5V	0	OFF
1	0	5V	0V	0	OFF
1	1	5V	5V	1	ON

Task 4: AND Gate Using IC 7408

- Wire gate-1 (pins 1, 2 → 3) and test logic combinations
- Repeat for gate-2 (pins 4, 5 → 6), gate-3 (pins 9, 10 → 8), gate-4 (pins 12, 13 → 11)
- Record outputs and verify truth table

Brief Description of Current Commercialization Plan :

- Provides **benchmarking** against NSQF standards

Portfolio-Based Assessment

- Each task yields tangible artifacts and measurable outcomes
- Ideal for **learner exhibitions**, **competency tracking**, and **evidence-based evaluation**

✅ Instructor Development

- Clear procedural steps
- Embedded formative assessment
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🧪 Key Tasks and Logic Gate Implementation

✅ Task 1–3: OR and AND Gates Using Switches and Lamps

Gate Type	Method	Verification
OR	Switches + Lamp	Truth table (A + B)
AND	Switches + Lamp	Truth table (A · B)

📊 Sample Truth Table (AND Gate)

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- Repeat for gate-2 (pins 4, 5 → 6), gate-3 (pins 9, 10 → 8), gate-4 (pins 12, 13 → 11)
- Record outputs and verify truth table

Status :
Declined
Submitted Date :
Aug 15, 2025
My I-Corps Submissions
I-Corps Executive Summary ID :
P-09948
Academic Institution :
Atlantic international university
Entrepreneurial Lead :
engineering electrical engineering electrical
Entrepreneurial Lead Email :
Emailtshingombefiston@gmail.com
Entrepreneurial Lead Qualification :
Engineering electrical master,
Technical Lead :
engineering electrical engineering electrical
Technical Lead Email :
Emailtshingombefiston@gmail.com
Technical Lead Qualification :
Edition montesorie
I-Corps Mentor :
engineering electrical engineering electrical
I-Corps Mentor Email :
Emailtshingombefiston@gmail.com
I-Corps Mentor Qualification :
Intelligence it
Should your team be invited to submit an I-Corps Teams grant proposal, who will be submitting the grant proposal as PI :
Entrepreneurial Lead (EL)
Is your team submitting from another federal agency? If so, please select from the drop down below :
Other Agency
There are two pathways to establish for the NSF I-Corps Teams program. Which is your team claiming :
Participating in a regional I-Corps Program
Current/Previous NSF Research Award # :
1
What is the IP status of the innovation :

Not disclosed to tech transfer office

Brief Description of Technology (Intellectual Merit) :

Technologie merite award . Education technology and engineering are Cree magniful .policy information system management resolved crime system intelligence recruitment circulum student design in corp system .

Brief Description of Commercial Applications (Broader Impacts) :

Commercial applications are Cree system economic intelligence systems policy circulum cost education award money financial reward in circuit education means resolved quickly system education marking completing survey task job in industriel

Brief Description of Current Commercialization Plan :

Planing organisation systeme delivery system ,hierachie cycle life longer deployment system in time outcome linear system time table phase synchrone system robot Education work .chart team

Status :

Declined

Submitted Date :

Feb 3, 2025

Showing 1-4 of 4 records | Page 1 of 1

For technical questions or immediate assistance, please email:
or call the NSF TIP Help Desk at (888) 988-6507

I-Corps Executive Summary ID :

P-09874

Academic Institution :

Engineering electrical tshingombe

Entrepreneurial Lead :

engineering electrical engineering electrical

Entrepreneurial Lead Email :

Emailtshingombefiston@gmail.com

Entrepreneurial Lead Qualification :

Engineering electrical

Technical Lead :

engineering electrical engineering electrical

Technical Lead Email :

Emailtshingombefiston@gmail.com

Technical Lead Qualification :

Information technology

I-Corps Mentor :

engineering electrical engineering electrical

I-Corps Mentor Email :

Emailtshingombefiston@gmail.com

I-Corps Mentor Qualification :

Information

Should your team be invited to submit an I-Corps Teams grant proposal, who will be submitting the grant proposal as PI :

Entrepreneurial Lead (EL)

Is your team submitting from another federal agency? If so, please select from the drop down below :

Other Agency

There are two pathways to establish for the NSF I-Corps Teams program. Which is your team claiming :

Relevant current/previous NSF research award

Current/Previous NSF Research Award # :

Engineering

What is the IP status of the innovation :

Patent issued

Patent Number :

12345678912345678 91

Brief Description of Technology (Intellectual Merit) :

Engineering electrical award degre diploma framework qualifications graduate resarch national trade diploma regulation certificate outcome job assessments enginering electrical master advance technologie implementation framework language..

Brief Description of Commercial Applications (Broader Impacts) :

Engineering electricsl frameworks low ruling irregularity regulation bsck log delivery

Brief Description of Current Commercialization Plan :

Planning auditing enginering electrical snf onformstion intellectual computer project ..portofolio

Status :

Declined

Submitted Date :

Dec 19, 2024